NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

PRESCRIBED GRAZING

(Ac.)

CODE 528

DEFINITION

Managing the controlled harvest of vegetation with grazing animals.

PURPOSE

- Improve or maintain the health and vigor of plant communities.
- Improve or maintain quantity and quality of forage for livestock health and productivity.
- Improve or maintain water quality and quantity.
- Reduce accelerated soil erosion, and maintain or improve soil condition.
- Improve or maintain the quantity and quality of food and/or cover available for wildlife.
- Promote economic stability through grazing land sustainability.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all lands where grazing animals are managed.

CRITERIA

General Criteria Applicable to All Purposes

Removal of herbage will be in accordance with site production limitations, rate of plant growth and the physiological needs of forage plants. Climatic conditions, pasture management, soil fertility, and competition are among several factors determining the growth rate of the forage. During periods of high plant stress the frequency of defoliation will be decreased. During periods of low plant stress, defoliation can be more frequent.

Manage kind/class of animal, animal number, grazing distribution, length of grazing periods, timing, and season of use to provide the desired degree of defoliation and to provide sufficient deferment from grazing during the growing period.

Protect soil, water, air, plant and animal resources when locating livestock feeding, handling and watering facilities.

Manage grazing animals to maintain adequate vegetative cover on sensitive areas (i.e. riparian, wetland, habitats of concern, karst areas).

Additional Criteria to Improve or Maintain the Health and Vigor of Plant Communities.

Duration and intensity of grazing will be based on desired plant health and expected productivity of key forage species to meet management unit objectives.

The designated key species on pastureland and rangeland will not be grazed closer than the minimum leaf lengths shown in Table 1. Also, grazing use should not be initiated on pastureland until the designated key species has reached the minimum height shown in Table 1. To maintain the health and vigor of the designated key species, these species should attain a minimum leaf length as shown in Table 1 before the first killing frost.

Schedule livestock movements based on rate of plant growth, available forage and utilization, not calendar dates.

Periodic rest from grazing may be needed to maintain or restore the desired plant community following episodic events, such as wildfire, severe drought, extended ponding or flooding.

Additional Criteria to Improve or Maintain Quantity and Quality of Forage for Livestock Health and Productivity

Plan grazing systems to match forage quantity and quality with goals of the livestock producer. The average stocking rate over the season will not exceed the productive capacity of the forages in the grazing system unless adequate supplemental and emergency feed sources are identified.

Plan grazing systems to allow for an average rest period of 30 days, or 35 days in situations where sites are droughty or otherwise present conditions that restrict forage growth.

Plan for sacrificial paddocks for periods when forage growth is inadequate to meet the needs of the livestock.

Additional Criteria to Improve or Maintain Water Quality and Quantity

Maintain adequate ground cover and plant density to maintain or improve filtering capacity of the vegetation.

Water facilities, mineral and salt feeders, and other areas of livestock concentration will be strategically located to promote uniform distribution of the grazing pressure for better distribution of manure. All areas being grazed should be within 600-800 feet of a watering facility when possible.

Access points to naturally occurring water sources, when used, will be protected utilizing criteria established in conservation practice standard Heavy Use Area Protection (561).

Additional Criteria to Reduce Soil Erosion and Maintain Soil Condition

Maintain adequate ground cover, litter and canopy to maintain or improve infiltration and soil condition.

Minimize concentrated livestock areas, trailing, and trampling to reduce soil compaction, excess runoff and erosion.

As much as possible, select areas for cattle lanes that have low soil erosion potential and where runoff does not concentrate. Provide erosion protection when necessary.

Additional Criteria to Improve or Maintain Food and/or Cover for Wildlife Species of Concern

Manage for diverse plant communities. Manage plant height, structure and density for desired wildlife habitat.

Provide rest from grazing during critical nesting periods.

Additional Criteria to Promote Economic Stability through Grazing Land Sustainability.

Evaluate the economics of the forage system and associated infrastructure.

Develop a grazing system that provides forage for as much of the year as possible to minimize supplemental feed cost.

Develop a contingency plan to ensure resource management and economic feasibility without resource degradation.

Reduce the loss of livestock from toxic and poisonous plants.

CONSIDERATIONS

When needed, rest areas for a period of time to ensure the success of prescribed fire, brush control, seeding or other conservation practices.

Where practical, start the grazing sequence in a different management unit each growing season.

When weeds are a significant problem prescribed grazing should be implemented in conjunction with pest management to protect desired plant communities. Refer to the standard for Pest Management (595).

Livestock feeding, handling, and watering facilities should be designed and installed in a manner to improve and/or maintain animal distribution. These facilities should also be designed and installed to minimize stress, the spread of disease, parasites, contact with harmful organisms and toxic plants.

Supplemental feed and/or mineral requirements should be balanced with the forage consumption to meet the desired nutritional level for the kind and class of grazing livestock.

Consider utilizing annual forage crops and crop aftermath to extend rest periods, to provide feed during periods of slow forage growth, and to extend the grazing season.

Animal husbandry requirements which may affect the design of the grazing prescription will be considered. Such requirements include breeding season, method of breeding (artificial insemination or natural), and feed requirement in relationship to kind and class of animal.

Application of fertilizer to increase forage production will be based on a soil test. Fertilizer rates should not exceed recommended amounts after legume and manure credits have been considered. Refer to practice standard Nutrient Management (590).

Renovation or re-establishment of pastureland will be in accordance with practice standard Pasture and Hayland Planting (512).

Prescribed grazing should consider the needs of other enterprises utilizing the same land, such as wildlife and recreational uses.

Consider improving carbon sequestration in biomass and soils through management of grazing to produce the desired results.

PLANS AND SPECIFICATIONS

The prescribed grazing plan shall conform to all applicable federal, state and local laws. Seek measures to avoid adverse affects to endangered, threatened, and candidate species and their habitats.

Prepare a prescribed grazing plan for all management units where grazing will occur according to state standards and specifications.

Prescribed grazing plans will include:

- Goals and Objectives clearly stated.
- Resource Inventory (i.e. Resource condition, existing structures, facilities, soil).
- Descriptions of sensitive areas within the pasture and management options to protect them from damage.
- Forage Inventory of the expected forage quality, quantity and species of forage in each management unit(s) during the grazing period.
- Forage-Animal Balance developed as a sustainable grazing plan for the management unit(s), which insures forage produced or available meets forage demand of livestock and/or wildlife of concern.
- Grazing Plan developed for livestock that identifies periods of grazing, rest, and other treatment activities for each management unit.
- Contingency plan developed that details potential problems (i.e., severe drought, flooding) and serves as a guide for adjusting the grazing prescription to ensure resource management and economic feasibility without resource degradation.
- Locations of fences and identification of the type of fence. Refer to practice standard Fence (382).
- Include a description of the livestock watering system, including source of water, pumping method, delivery method, and drinking facility locations. Refer to practice standards for Pipeline (516), Pumping Plant (533), and Watering Facility (614).

OPERATION AND MAINTENANCE

Operation. Prescribed Grazing will be applied on a continuing basis throughout the occupation period of all grazing units.

Adjustments will be made as needed to ensure that the goals and objectives of the prescribed grazing strategy are met.

Maintenance. All facilitating practices (e.g. Fence (382), Pest Management (595), etc.) that are needed to effect adequate grazing distribution as planned by this practice standard will be maintained in good working order.

REFERENCES

1. Grass Makes Its Own Food, Agricultural Information Bulletin No 223

2. Pastures For Profit: A Guide to Rotational Grazing, University of Minnesota Publication A3529

3. Understanding Grass Growth: The Key to Profitable Livestock Production, Published by Trabon Printing Co., Inc., 430 East Bannister Road, Kansas City, MO 64131

4. Grass: The Stockmans Crop, How to Harvest More of It, Published by Sunshine Unlimited, Inc., P.O. Box 471, Lindsborg, KS 67456

5. National Range and Pasture Handbook, USDA, NRCS

6. Grazing Systems Planning Guide, USDA Natural Resources Conservation Service, University of Minnesota Extension Service, Minnesota Board of Water and Soil Resources

TABLE 1

MINIMUM HEIGHTS OF PASTURE SPECIES FOR INITIATING AND TERMINATING GRAZING

	Begin Grazing		End Grazing	
	Initial grazing height in early spring*	Minimum and optimum height of vegetative growth	Minimum stubble height **	Minimum regrowth before killing frost
Species				
		(inches)		
Alfalfa	-	Bud stage	-	6***
Creeping foxtail	6	8 - 10	3	6
Green needlegrass	4-5	6 - 8	3	5
Inter. Wheatgrass	4-5	8 - 14	4	6
Kentucky bluegrass	2	4 - 6	2	4
Orchardgrass	3-4	6 - 10	3	6
Perennial Ryegrass	3-4	5 – 7	3	4
Pubescent wheatgrass	4-5	8 - 14	4	6
Reed canarygrass	4-5	8 - 8	4	6
Russian Wildrye	4	5 - 7	3	4
Slender wheatgrass	4-5	6 - 12	3	6
Smooth brome	4	8 - 14	4	6
Tall fescue	4	6 - 10	3	6
Tall wheatgrass	4-5	8 - 14	4	6

Timothy	4	6 - 10	4	5
Western wheatgrass	4	6 - 10	4	5
Big Bluestem	-	10 - 14	6	6
Indiangrass	-	10 - 14	6	6
Little bluestem	-	5 - 7	3	4
Sand bluestem	-	8 - 14	6	6
Sideoats grama	-	4 - 6	2	4
Switchgrass	-	12 - 20	8	10

Source: Minnesota NRCS Conservation Practice Standard #528A, Prescribed Grazing.

* This applies only to the initial grazing in the spring (early May). The livestock must be moved rapidly through the paddocks during this time to prevent overgrazing and to keep the forage from "getting ahead of the livestock".

** Minimum stubble height is critical if stand is to be maintained. This applies to that part of the grazing season after the initial rapid growth period in early May, as well as at the end of the grazing season.

*** The last harvest of alfalfa for pasture or hay should generally be made 35-45 days prior to the time when the first hard freeze typically occurs.

NRCS, Minnesota

May 2006